



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs  
Registration Division (7505P)  
1200 Pennsylvania Ave., N.W.  
Washington, D.C. 20460

EPA Reg. Number:

279-9652

Date of Issuance:

4/6/20

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
(under FIFRA, as amended)

Term of Issuance:

Conditional

Name of Pesticide Product:

VKM32 Insect Control

Name and Address of Registrant (include ZIP Code):

Jacob Vukich  
Senior Product Registration Manager  
FMC Corporation  
2929 Walnut Street  
Philadelphia, PA 19104

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(C). You must comply with the following conditions:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product under FIFRA when the Agency requires all registrants of similar products to submit such data.

Signature of Approving Official:

Jacquelyn Herrick, Product Manager 03  
Invertebrate and Vertebrate Branch 1, Registration Division  
(7505P)

Date:

4/6/20

EPA Form 8570-6

2. You are required to comply with the data requirements described in the DCI identified below:

a. Bifenthrin GDCI-128825

You must comply with all of the data requirements within the established deadlines. If you have questions about the Generic DCI listed above, you may contact the Chemical Review Manager in the Pesticide Reevaluation Division: <http://iaspub.epa.gov/apex/pesticides/f?p=chemicalsearch:1>

3. Make the following label changes before you release the product for shipment:

- Revise the EPA Registration Number to read, “EPA Reg. No. 279-9652.”

4. Submit one copy of the final printed label for the record before you release the product for shipment.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance.

If you fail to satisfy these data requirements, EPA will consider appropriate regulatory action including, among other things, cancellation under FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 03/24/2020
- Alternate CSF 1 dated 03/24/2020

If you have any questions, please contact Anna Briley by phone at (703) 347-0262 or via email at [briley.anna-katrina@epa.gov](mailto:briley.anna-katrina@epa.gov).

Enclosure

## RESTRICTED USE PESTICIDE

Due to toxicity to fish and aquatic organisms. For retail sale to and use only by certified applicators, or persons under their direct supervision and only for those uses covered by the certified applicator's certification.

# VKM32 insect control

WITH RYNAXYPYR® ACTIVE and BIFENTHRIN

BIFENTHRIN	GROUP	3A	INSECTICIDE
CHLORANTRANILIPROLE	GROUP	28	INSECTICIDE

VKM32 insect control is a suspension concentrate.

Contains 1.33 lb. Bifenthrin and 0.89 lb. Chlorantraniliprole per gallon.

<i>Active Ingredients</i>	<i>By Weight</i>
Bifenthrin (2 methyl[1,1'-biphenyl]-3-yl) methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethyl- Cyclopropanecarboxylate*	14.4%
Chlorantraniliprole 3-Bromo-N-[4-chloro-2-methyl-6-[(methylamino)carbonyl]phenyl]-1-(3-chloro-2-pyridinyl)- 1H-pyrazole-5-carboxamide	9.6%
<i>Other Ingredients</i>	76%
TOTAL	100%

\*Cis isomers 97% minimum, trans isomers 3% maximum.  
U.S. Patent No. 4,238,505

EPA Reg. No. 279-9652

EPA Est. No. \_\_\_\_\_

### Nonrefillable Container

Net: \_\_\_\_\_

OR

### Refillable Container

Net: \_\_\_\_\_

Not for sale, sale into, distribution and/or use in Nassau, Suffolk, Kings, and Queens counties of New York State.

**KEEP OUT OF REACH OF CHILDREN**

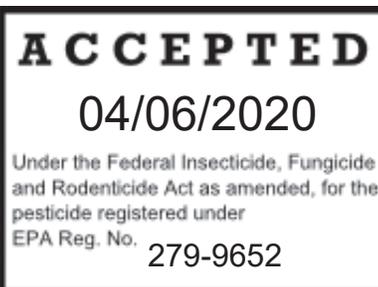
## CAUTION

This label must be in the possession of the user at the time of application. Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Sold By



FMC Corporation  
2929 Walnut Street  
Philadelphia, PA 19104



## FIRST AID

**If in Eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**If Swallowed:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

**If Inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

**If on Skin or Clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

## HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-331-3148 for emergency medical treatment information.

## NOTE TO PHYSICIAN

This product contains a pyrethroid. If large amounts have been ingested, the stomach and intestines should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided.

**For Emergency Assistance Call (800) 331-3148**

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

#### CAUTION

Causes moderate eye irritation. Harmful if swallowed. Avoid breathing vapor or spray mist. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers (other than mixers and loaders) must wear:

- Long-sleeved shirt and long pants
- Chemical resistant gloves made of barrier laminate, butyl rubber  $\geq$  14 mils, nitrile rubber  $\geq$  14 mils, neoprene rubber  $\geq$  14 mils, polyvinyl chloride  $\geq$  14 mils or viton  $\geq$  14 mils.
- Shoes plus socks

#### Mixers and Loaders must wear:

- Long-sleeved shirt and long pants
- Chemical resistant gloves made of barrier laminate, butyl rubber  $\geq$  14 mils, nitrile rubber  $\geq$  14 mils, neoprene rubber  $\geq$  14 mils, polyvinyl chloride  $\geq$  14 mils or viton  $\geq$  14 mils.
- Shoes plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

## USER SAFETY RECOMMENDATIONS

**USERS SHOULD:** Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## ENVIRONMENTAL HAZARDS

This pesticide is extremely toxic to fish and aquatic invertebrates. This product is toxic to oysters and shrimp. Use with care when applying in areas adjacent to any body of water. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not make applications when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.

The use of bifenthrin is prohibited in areas that may result in exposure of endangered species to bifenthrin. Prior to use in a particular county contact the local extension service for procedures and precautions to use to protect endangered species. Surface Water Advisory –

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of chlorantraniliprole from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

Ground Water Advisory -

Chlorantraniliprole has properties and characteristics associated with chemicals detected in ground water. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow.

## DIRECTIONS FOR USE

### Restricted Use Pesticide

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

VKM32 insect control must be used only in accordance with the directions on this label, or as otherwise permitted by FIFRA. Always read the entire label, including the Limitation of Warranty and Liability.

VKM32 insect control may be used on crops on this label grown for seed production.

## RESTRICTIONS

- Do not treat plants grown for transplanting. Not for use in nurseries, plant propagation houses, or greenhouses by commercial transplant producers on plants being grown for transplanting.
- This product is only for commercial use.
- Not for use on ornamental plants or plants being grown for ornamental purposes.
- Not for residential use.
- Do not apply VKM32 insect control through any irrigation system unless specified in this label or in supplemental labeling.

For New York State Only:

The following restrictions are required to permit use of VKM32 insect control in the State of New York:

- This product may not be applied within 100 feet of a water body (lake, pond, river, stream, wetland, or drainage ditch).
- Aerial application of this product is prohibited.
- Not for sale, sale into, distribution and/or use in Nassau, Suffolk, Kings, and Queens counties of New York State.

## ***AGRICULTURAL USE REQUIREMENTS***

VKM32 insect control must be used only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on the label about personal protective equipment, restricted-entry interval, and notification to workers (as applicable).

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

For any requirements specific to your State or Tribe, consult the state or Tribal agency responsible for regulation.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

For early entry into treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, wear:

- Coveralls
- Shoes plus socks
- Chemical resistant gloves made of barrier laminate, butyl rubber  $\geq$  14 mils, nitrile rubber  $\geq$  14 mils, neoprene rubber  $\geq$  14 mils, polyvinyl chloride  $\geq$  14 mils or viton  $\geq$  14 mils.

VKM32 insect control is a suspension concentrate that can be applied as a foliar application for broad spectrum control of lepidopteran insect pests as well as other listed chewing and sucking insect pests. VKM32 insect control is mixed with water for application.

VKM32 insect control is a mixture of bifenthrin, belonging to the pyrethroid class of chemistry, and Rynaxypyr® active, an anthranilic diamide class of insecticides with a novel mode of action acting on insect ryanodine receptors. VKM32 insect control has contact and ingestion activity, but it is most effective through ingestion of treated plant material. After exposure to VKM32 insect control, affected insects will rapidly stop feeding and become paralyzed. Susceptible insect pests could die within minutes, but in some cases it could take 1 - 3 days. Time applications to the most susceptible insect pest stage, typically at egg lay to egg hatch and/or newly hatched larvae, before populations reach damaging levels.

Rate of application is variable according to pest pressure, timing of sprays, and field scouting. Use lower rates under light to moderate infestations; higher rates under heavy insect pressure and for mite control. Arid climates generally require higher rates.

Cultivation within 10 feet of a water body is prohibited to allow for the growth of a vegetated filter strip.

In New York State this product may not be applied within 100 feet (using ground equipment) to 300 feet (using aerial equipment) of coastal marshes or streams that drain into coastal marshes.

## **INTEGRATED PEST MANAGEMENT**

FMC supports the use of Integrated Pest Management (IPM) programs to control pests. This product may be used as part of an IPM program, which can include biological, cultural, and genetic practices, aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, rotation of insecticides with different modes-of-action, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop or site systems in your area.

## **SCOUTING**

Monitor insect populations to determine whether there is a need for application of VKM32 insect control based on locally determined economic thresholds and pest management guidelines. More than one treatment of VKM32 insect control may be required to control a population of pests.

## **INSECT RESISTANCE MANAGEMENT**

For resistance management, VKM32 insect control contains bifenthrin, a Group 3A pyrethroid insecticide, and Rynaxypyr® active (chlorantraniliprole), a Group 28 anthranilic diamide insecticide. Repeated and exclusive use of VKM32 insect control (bifenthrin+chlorantraniliprole) or other Group 3A or Group 28 insecticide may lead to the buildup of resistant strains of insects in some crops.

Some insects are known to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, this product may be used as part of a resistance management strategy established for the use area. These strategies may include incorporation of cultural and biological control practices, alternation of mode-of-action classes of insecticides on succeeding generations, and targeting the most susceptible life stage. Consult your local or state agricultural authorities for details.

Unless directed otherwise in the specific crop/pest sections of this label, the best practices are to follow these instructions to delay the development of insecticide resistance:

- Avoid using the same mode of action (IRAC group number) on consecutive generations of insect pests.
- Apply VKM32 insect control using a “treatment window” approach to avoid exposure of successive insect pest generations to the same mode of action.
- A “treatment window” is defined as the period of residual activity provided by single or sequential applications of products with the same mode of action. This “treatment window” should not exceed approximately the length of one generation of the target pest.
- Within the “VKM32 insect control treatment window”, make no more than 2 applications of VKM32 insect control or other product that contains a Group 28 insecticide within a single generation of the target pest on a crop or within a 30 day period to the same insect species on a crop.
- Following a “VKM32 insect control treatment window”, rotate to a treatment window of effective products with a different mode of action. This window should approximate the duration of one generation of the target pest.
- Target the most susceptible insect life stages, whenever possible.
- Do not use less than the labeled rates of VKM32 insect control when applied alone or in tank mixtures.
- Monitor insect populations for product effectiveness.

If resistance to VKM32 insect control develops in your area, VKM32 insect control or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. If you experience difficulty with control and resistance is a reasonable cause, immediately consult your local FMC company representative or agricultural advisor for the best alternate method of control for your area. For additional information on insect resistance monitoring, visit the Insecticide Resistance Action Committee (IRAC) on the web at <http://www.irc-online.org>.

## **APPLICATION**

Apply at the specified rates when insect populations reach locally determined economic thresholds. Consult the cooperative extension service, professional consultants or other qualified authorities to determine appropriate threshold levels for treatment in your area.

Apply follow-up treatments of VKM32 insect control, as labeled, to keep pest populations within threshold limits. Refer to the Insect Resistance Management section of this label for further guidance on follow-up treatments. See individual crop sections of this label for specific minimum spray intervals.

Use sufficient water to obtain thorough, uniform coverage. Effective residual control depends on ingestion of treated plant material, therefore thorough spray coverage is essential for optimum control of targeted pest insects. Using increased water volumes will typically result in better spray coverage, especially under adverse conditions such as dry, hot weather or dense plant foliage.

VKM32 insect control can be applied by ground or aerial application equipment. VKM32 insect control can be applied via overhead sprinkler chemigation systems, except on pecans. See "CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS" section for instructions on overhead sprinkler chemigation. For aerial application use the following directions unless otherwise specified in specific crop/pest sections of this label or EPA-approved supplemental labeling: use a minimum of 2 gallons per acre (gpa) of water. For all other application methods use the following directions, unless otherwise specified in specific crop/pest sections of this label or EPA-approved supplemental labeling: use a minimum of 10 gal per acre (GPA) of water for all crops.

Use of Adjuvants - In some situations where coverage is difficult to achieve such as closed canopy, dense foliage, plants with waxy leaf surfaces, or less than optimum application equipment, an adjuvant may improve performance. Use only adjuvant products that are labeled for agricultural use and follow the directions on the manufacturer's label. Always conduct a premix test for compatibility. Use a proven adjuvant that does not affect foliage and/or fruit finish. Refer to specific crop sections of this label for additional adjuvant guidance.

## **SPRAY PREPARATION**

Spray equipment must be clean and free of previous pesticide deposits before applying VKM32 insect control. Fill spray tank 1/4 to 1/2 full of water. Add VKM32 insect control directly to spray tank. Mix thoroughly to fully disperse the insecticide, once dispersed continued agitation is required. Use mechanical or hydraulic means; do not use air agitation. Do not store spray mix solutions overnight in spray tank. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

## TANK MIXTURES

This product can be mixed with pesticide products that are labeled for use on the same crops as VKM32 insect control. Do not exceed labeled dosage rates. This product cannot be mixed with any product containing a label prohibition against such mixing.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Before using a tank mix for the first time, always determine the compatibility of VKM32 insect control with the tank mixtures by using a jar test.

**Compatibility** -Since formulations may be changed and new ones introduced, premix a small quantity of a desired tank mix and observe for possible adverse changes (settling out, flocculation, etc.).

Steps to conduct a jar test to determine physical tank mix compatibility of VKM32 insect control with other products:

- Add clean water to jar proportional to the planned water volume that will be used in the spray tank (a jar size of 8-16 oz is acceptable).
- Using the most restrictive PPE of the products to be tested, mix proper proportions of VKM32 insect control and desired tank mix partner(s) as will be present in the spray tank, add one product at a time following the sequence of addition according to formulation type provided in this label.
- Seal and shake mixture after each product is added.
- Allow to stand for 1 hour.
- View jar to determine if settling, flocculation, crystallization or any other undesirable changes have happened.
- If none of the above is observed or the solution can be easily remixed after shaking, the mixture is compatible with VKM32 insect control.
- If the tank mix is not compatible, a higher water volume, reduced rate of the tank mix partner(s), reduced number of tank mix partners or a compatibility agent may be needed.

## TANK MIXTURES AND CROP SAFETY

Crop varieties can differ in their responsiveness to tank mixtures, and environmental conditions can have an influence on product performance and crop response. It is not possible to test VKM32 insect control alone or with all possible tank mix combinations on all varieties under all environmental conditions. When considering the use of a tank mixture on a labeled crop without prior experience, or which is not specifically described on VKM32 insect control product labeling or in other FMC product use instruction, it is important to check crop safety first. To test for crop safety, prepare a small volume of the intended tank mixture, apply it to an area of the target crop as directed by both this and the tank mix partner product labels, and observe the treated crop to ensure that a phytotoxic response does not occur.

Use of VKM32 insect control in any tank mixture applications that is not specifically described on VKM32 insect control product labeling or in other FMC product use instructions, could potentially result in crop injury. Follow the precautions on this label and on the label for any other product to be used in tank mixtures before making such applications to your crops. Follow the most restrictive labeling. FMC will not be responsible for any crop injury arising from the use of a tank mixture that is not specifically described on VKM32 insect control product labeling or in other FMC product use instruction.

## TANK MIXING SEQUENCE

Add different formulation types in the sequence indicated below\*. Allow time for complete mixing and dispersion after addition of each product.

1. Water soluble bag.
2. Water dispersible granules.
3. Wettable powders.
4. VKM32 insect control and other water based suspension concentrates.
5. Water-soluble concentrates.
6. Oil based suspension concentrates.
7. Emulsifiable concentrates.
8. Adjuvants, surfactants, oils.
9. Soluble fertilizers.
10. Drift retardants.

\* Unless otherwise specified by manufacturer directions for use or by local experience.

## SPRAY TANK CLEANOUT

Prior to application, start with clean, well maintained application equipment. Immediately following application, thoroughly clean all spray equipment to reduce the risk of forming hardened deposits which might become difficult to remove. Drain spray equipment. Thoroughly rinse sprayer and flush hoses, boom and nozzles with clean water. Clean all other associated application equipment. Take all necessary safety precautions when cleaning equipment. Do not clean near wells, water sources or desirable vegetation. Dispose of waste rinse water in accordance with local regulations.

## BUFFER ZONES

### Vegetative Buffer Zones

Construct and maintain a minimum 10-foot-wide vegetative filter strip of grass or other permanent vegetation between the field edge and down gradient aquatic habitat (such as, but not limited to, lakes; reservoirs; rivers; permanent streams; marshes or natural ponds; estuaries; and commercial fish farm ponds).

Only apply products containing bifenthrin onto fields where a maintained vegetative buffer strip of at least 10 feet exists between the field and down gradient aquatic habitat.

For guidance, refer to the following publication for information on constructing and maintaining effective buffers: *Conservation Buffers to Reduce Pesticide Losses. Natural Resources Conservation Services. USDA, NRCS. 2000. Fort Worth, Texas. 21pp* [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs143\\_023819.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_023819.pdf).

**Buffer Zone for Ground Application (groundboom, overhead chemigation, or airblast)** – Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, and commercial fish ponds).

## SPRAY DRIFT REQUIREMENTS

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions.

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

### Wind Direction and Speed

Only apply this product if the wind direction favors on-target deposition. Do not apply when the wind velocity exceeds 15 mph.

### Temperature Inversion

Do not make aerial or ground applications into temperature inversions. Inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

### Droplet Size

Use only Medium or coarser spray nozzles (for ground and non-ULV aerial application) according to ASAE (S572) definition for standard nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size.

### Additional Requirements for Ground Applications

Wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application.

For ground boom applications, apply using a nozzle height of no more than 4 feet above the ground or crop canopy.

For airblast applications, turn off outward pointing nozzles at row ends and when spraying the outer two rows. To minimize spray loss over the top in orchard applications, spray must be directed into the canopy.

### Additional Requirements for Aerial Applications

The spray boom should be mounted on the aircraft as to minimize drift caused by wingtip or rotor vortices. The minimum practical boom length should be used and must not exceed 75% of the wing span or 80% rotor diameter.

Flight speed and nozzle orientation must be considered in determining droplet size.

Spray must be released at the lowest height consistent with pest control and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety.

When applications are made with a cross-wind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind.

### Shielded Sprayers

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

### Assisted (Airblast) Field Crop Sprayers

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that drift is not occurring.

Note: Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Consult the application equipment section of this label to determine if use of an air assisted sprayer is recommended.

## **CHEMIGATION USING OVERHEAD SPRINKLER SYSTEMS**

**Types of Chemigation Systems:** VKM32 insect control can be applied through overhead sprinkler irrigation systems, including the following; center pivot, end tow, hand move, lateral move, side roll, big gun, solid set and wheel line. The irrigation system used must provide uniform water distribution.

### **Directions for Chemigation**

#### **Preparation**

A pesticide tank is recommended for the application of VKM32 insect control in chemigation systems.

Thoroughly clean the injection system and tank of any fertilizer or chemical residues using a standard clean-out procedure.

Dispose of any residues in accordance with State and Federal laws. With the mix tank 1/4 to 1/2 full with water and the agitator running, measure the required amount of VKM32 insect control and add it to the tank. Then add additional water to bring your total pesticide mixture up to the desired volume for your application. Note: Always add the VKM32 insect control to water, never put VKM32 insect control into a dry tank or other mixing equipment without first adding water. See "Tank Mixing Sequence" section of the container label for tank mixing sequence. Where non-emulsified oils are used as the diluent, 1 to 2 pints per acre is recommended. Continue to agitate the mixture throughout the application process. Use mechanical or hydraulic agitation, do not use air agitation.

#### **Injection Into Chemigation Systems**

Inject the proper amount of VKM32 insect control into the irrigation water flow using a positive displacement injection pump or a Venturi injector. Injection should occur at a point in the main irrigation water flow to ensure thorough mixing with the irrigation water. For continuously moving systems, inject the solution containing VKM32 insect control into the irrigation water line continually and uniformly throughout the irrigation cycle.

Apply in no more than 0.2 inches of water per acre. For overhead sprinkler systems that are stationary, add the solution containing VKM32 insect control to the irrigation water line and apply no more than 0.2 inches of water per acre.

#### **Uniform Water Distribution**

The irrigation system used for application of VKM32 insect control must provide for uniform distribution of VKM32 insect control treated water. Non-uniform distribution can result in crop injury, lack of effectiveness or illegal pesticide residues in or on the crop being treated. Ensure the irrigation system is calibrated to uniformly distribute the chemigation application to the crop. Contact the equipment manufacturer, the local University Extension agent or other experts if you have questions about achieving uniform distribution of the application.

#### **Equipment Calibration**

Calibrate the irrigation system and injector before applying VKM32 insect control. Calibrate the injection pump while the system is running using the expected irrigation rate. If you have questions about calibration, you should contact your state extension service specialists, equipment manufacturer or other experts.

#### **Monitoring of Chemigation Applications**

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of a responsible person, shall shut the system down and make necessary adjustments should the need arise. Wear the personal protective equipment as defined in the PPE section of the label for applicators and other handlers when making adjustments or repairs on the chemigation system when VKM32 insect control is in the irrigation water.

#### **Operation**

Start the water pump and sprinkler, and let the system achieve the desired pressure and speed before starting the injector. Start the injector and calibrate the injection system according to the directions above. This procedure is necessary to deliver the desired rate per acre in a uniform manner. When the application is finished, allow the entire irrigation and injector system to be thoroughly flushed clean before stopping the system.

End guns must be turned off during the application, if they irrigate nontarget areas or if they do not provide uniform application and coverage.

It is recommended that nozzles in the immediate area of wells, control panels, chemical supply tanks and system safety devices be plugged to prevent contamination of these areas.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Do not apply when system connections or fittings leak or when nozzles do not provide uniform distribution.

Do not allow irrigation water to collect or run-off during chemigation.

#### **Cleaning the System**

Thoroughly clean the injection system and tank of any fertilizer or chemical residues using a standard clean-out procedure.

Dispose of any residues in accordance with State and Federal laws. Consult your owner's manual or your local equipment dealer for cleanout procedures for your injection system.

#### **Required System Safety Devices for All Chemigation Systems**

The system must contain a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water

pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering device, such as a positive displacement pump or a Venturi injector, that provides uniform injection of the product, is effectively designed and constructed of materials compatible with the product, and is capable of being fitted with a system interlock.

Chemigation systems connected to public water systems must contain a functional, reduced- pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

## **CROP ROTATION**

Crops on this label and the following crops or crop groups may be planted immediately following harvest, or crop failure:

Artichoke, globe; Brassica (Cole) Leafy Vegetables (Crop Group 5); Bushberry subgroup (Crop subgroup 13-07B); Caneberry subgroup (Berry and Small Fruit Crop Group subgroup 13- 07A); Citrus (Crop Group 10); Corn (field, pop, seed, and sweet); Coriander; Cotton; Cucurbit Vegetables (Crop Group 9); Fruiting Vegetables (eggplant, groundcherry, okra, pepino, pepper – bell, pepper – nonbell, tomato); Grass Forage, Fodder, and Hay Group (Crop Group 17, only in Idaho, Oregon, and Washington); Herbs subgroup (Crop Group subgroup 19A); Grape; Hops; Leaf petioles (Crop Subgroup 4B); Head lettuce; Spinach; Legume Vegetables (Crop Group 6); Peanut: Mayhaw, Pear; Rapeseed; Root Vegetables (Crop Subgroup 1B, except sugar beet); Tuberous and Corm Vegetables (Crop Subgroup 1C); Garden beet; Radish; Soybean; Strawberry; Tree Nuts (Crop Group 14); Pistachios, and Tobacco;

The following crops or crop groups may be planted 30 days following the final application of VKM32 insect control: Alfalfa; Asparagus; ; Banana/Plantain; Bulb Vegetables (Crop Group 3-07); Citrus (Australian limes, Brown River finger lime, Mount white lime, New Guinea wild lime, Russel River lime, sweet lime, Tachibana orange, Tahiti lime, tangerine, trifoliolate orange, unqi fruit); Fruiting Vegetables (bush tomato, cocona, currant tomato, garden huckleberry, goji berry, martynia, naranjilla, roselle, sunberry, tomatillo, tree tomato); Grass Forage, Fodder, and Hay Group (Crop Group 17, except in Idaho, Oregon, and Washington); Large Shrub/Tree Berry subgroup (Crop subgroup 13-07C); Leafy Vegetables (Crop Subgroup 4A – except head lettuce and spinach); Low Growing Berry subgroup (Crop subgroup 13- 07G, except strawberry); Cacao; Nongrass Animal Feeds (Forage and Hay Crop Group 18); Prickly Pear Cactus; Coffee; Cereal Grains (Crop Group 15); Figs; Forage, Fodder, and Straw of Cereal Grains (Crop Group 16); Foliage of Legume Vegetables (Crop Group 7); Olives; Persimmons; Pineapple; Pome Fruits (Crop Group 11-10, except mayhaw and pear); Pomegranates; Quinoa; Rapeseed (Crop Subgroup 20A, except rapeseed); Rice; Root Vegetables (Crop Subgroup 1A); Tuberous and Corm Vegetables (Crop Subgroup 1D); Leaves of Root and Tuber Vegetables (Crop Group 2); Sugar beet; Sunflowers (Crop Subgroup 20B); Tree Nuts (Crop Group 14-12, except nuts in Crop Group 14); Small Fruit Vine Climbing (gooseberry, hardy kiwifruit, Maypop, Schisandra berry); Spearmint and Peppermint; Spice subgroup (Crop Group subgroup 19B – except coriander); Stone Fruits (Crop Group 12-12); Sugarcane: Tea; Teff; Ti; Tropical Fruits (acerola, atemoya, avocado, biriba, black sapote, canistel, cherimoya, custard apple, ilama, feijoa, guava, jaboticaba, longan, lychee, mamey sapote, mango, papaya, passionfruit, pulasan, rambutan, sapodilla, soursop, Spanish lime, star apple, starfruit, sugar apple, wax jambu, and White sapote (Casimiroa), and and/or hybrids of these).

All other crops cannot be planted until 12 months after the last application of VKM32 insect control.

Crop	Application Method	Target Pest	VKM32 Lb ai per acre	VKM32 fluid ounces product per acre	Last Application (Days to Harvest)	REI (Hours)
Corn (field, pop, seed)	FOLIAR	Grasshoppers Aphids Cereal leaf beetle Chinch bug Corn rootworm adults Cucumber beetle adult Cutworm species Flea beetle Greenbug Japanese beetle adult Sap beetle Southern corn leaf beetle Stinkbugs Tarnished plant bug Western bean cutworm	0.084 – 0.167	4.8 -9.6	30	12
		Army cutworm Corn earworm Common stalk borer Beet armyworm European corn borer Fall armyworm Southern armyworm Southwestern corn borer Sugarcane borer adults True armyworm or Armyworm species Webworms Yellowstriped armyworm	0.098 – 0.167	5.6 -9.6		
		Banks grass mite* Brown marmorated stink bug Carmine mite* Twospotted spider mite	0.134 – 0.167	7.7 -9.6		

**USE RESTRICTIONS**

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

Make no more than 3 applications per acre per calendar year.

Minimum interval between treatments is 7 days for field and popcorn, and 1 day for seed corn.

Apply in a minimum of 2-5 gallons of finished spray per acre by aircraft or in a minimum of 10 gallons per acre with ground equipment. To improve control by aircraft, use 5 gallons of finished spray per acre particularly when initial populations are heavier than normal. When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray.

Do not apply more than a total of 0.2 lb ai/A of chlorantraniliprole and 0.3 lb ai/A of bifenthrin per year. This total includes applications of VKM32 and other chlorantraniliprole or bifenthrin containing products.

**Grasshopper** - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched and the majority of the grasshopper population is 2nd – 3rd instar nymphs. Once grasshoppers contact and/or ingest VKM32 insect control there will be rapid feeding cessation. Do not make more than two sequential applications of VKM32 insect control before rotating to another registered insecticide having a different mode-of-action.

To control corn earworm and most other ear-attacking pests, apply VKM32 insect control when silking begins and repeat as necessary to maintain control.

To control western bean cutworm, apply at egg hatch before they move into the ear.

Southwestern Corn Borer, European Corn Borer: Make application for corn borer control with initial application at or shortly before egg hatch.

For control of other insect pests: Apply when pests first appear and repeat as necessary.

For Control of Mites: Apply for Banks Grass Mite control when colonies first form prior to leaf damage or discoloration and before dispersal above the bottom third of the plant. For Twospotted Spider Mite and Carmine Mite control, apply when colonies first form prior to leaf damage or discoloration and before widespread mite dispersal throughout the canopy. Higher rates will be necessary for heavier initial populations and corn under heat or drought stress. Field experience with dimethoate at 0.5 lb. active per acre in tank mixture has demonstrated good control under these conditions.

For mite control in Texas, New Mexico, Oklahoma, Arizona: Apply in a minimum of 5 gallons of finished spray per acre by aircraft or in a minimum of 10 gallons per acre with ground equipment.

\*Coverage is essential for control of this pest. Under heavy outbreak conditions, tank mixing with another product that is labeled for this pest is recommended for control. Pyrethroid resistance is common for this pest. Consult your local or state agricultural authority to determine if resistant pest populations are in your area. If so, refer to the resistance management statement in the Direction for Use section of this label.

Crop	Application Method	Target Pest	VKM32 Lb ai per acre	VKM32 fluid ounces product per acre	Last Application (Days to Harvest)	REI (Hours)
Cotton	FOLIAR	Boll weevil Cotton aphid*** Cotton fleahopper Cotton leafperforator Cutworm species Grasshoppers Plant bugs Southern garden leafhopper Soybean (banded) thrips Stink bugs Tobacco thrips	0.084 – 0.167	4.8 -9.6	21	12
		Beet armyworm Cabbage looper Cotton bollworm** Fall armyworm Pink bollworm Saltmarsh caterpillar Southern armyworm Soybean looper* Tobacco budworm** Western yellowstriped armyworm Lygus spcies Carmin spider mite*** Twospotted spider mite*** Whitefly***	0.098 - 0.167	5.6 – 9.6		

**USE RESTRICTIONS**

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

Make no more than 3 applications per acre per calendar year. Minimum interval between treatments is 5 days

Do not apply more than a total of 0.2 lb ai/A of chlorantraniliprole and 0.5 lb ai/A (0.3 lb ai/A in California) of bifenthrin per year. This total includes applications of VKM32 and other chlorantraniliprole or bifenthrin containing products.

Do not graze livestock in treated areas or cut treated crops for feed.

Do not make more than 10 synthetic pyrethroid applications (of one product or combination of products) to a cotton crop in one growing season.

\*Suppression only.

\*\*For Heliathine control (cotton bollworm and/or tobacco budworm in conventional non-transgenic/non-Bt cotton make the first application at 0.167 lb. ai per acre (9.6 oz product). Subsequent applications can be at rates of 0.098 - 0.167 lb. ai acre (5.6 – 9.6 oz product) depending on pest pressure. For control of cotton bollworm (*Helicoverpa zea*) in Bt transgenic cotton varieties, the initial application, and subsequent applications, of VKM32 insect control can be applied at 5.6 – 9.6 fluid ounces per acre as a foliar spray. Apply when cotton bollworm populations reach local established treatment thresholds to prevent crop damage.

**Grasshopper** - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched and the majority of the grasshopper population is 2nd – 3rd instar nymphs. Once grasshoppers contact and/or ingest VKM32 insect control there will be rapid feeding cessation. Do not make more than two sequential applications of VKM32 insect control before rotating to another registered insecticide having a different mode-of-action. VKM32 insect control may be applied in water or refined vegetable oil (soybean/cottonseed).

When applying by air, 1 quart of emulsified oil may be substituted for one quart of water in the finished spray.

\*\*\* Coverage is essential for control of this pest. Under heavy outbreak conditions, tank mixing with another product that is labeled for this pest is recommended for control. Pyrethroid resistance is common for this pest. Consult your local or state agricultural authority to determine if resistant pest populations are in your area. If so, refer to the resistance management statement in the Direction for Use section of this label.

Crop	Application Method	Target Pest	VKM32 Lb ai per acre	VKM32 fluid ounces product per acre	Last Application (Days to Harvest)	REI (Hours)
Corn (sweet)	FOLIAR	Aphids Cereal leaf beetle Cutworm species Chinch bug Corn rootworm adults Cucumber beetle adult Flea beetle Greenbug Grasshoppers Japanese beetle adult Sap beetle Southern corn leaf beetle Stinkbugs Tarnished plant bug Western bean cutworm	0.084 - 0.167	4.8 – 9.6	1	12
		Army cutworm Common stalk borer Corn earworm Beet armyworm European corn borer Fall armyworm Southern armyworm Southwestern corn borer True armyworm or Armyworm species Webworms Yellowstriped armyworm	0.098 - 0.167	5.6 – 9.6		
		Banks grass mite* Brown marmorated stink bug Carmine mite* Twospotted spider mite*	0.134 – 0.167	7.7 – 9.6		

**USE RESTRICTIONS**

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

For aerial application, use a minimum of 5 gallons per acre (gpa) of water, or in a minimum of 10 gallons per acre with ground equipment. When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray. Thorough coverage is essential to achieve control.

Make no more than 2 applications per acre per calendar year. Minimum interval between treatments is 1 day.

Do not apply more than a total of 0.2 lb ai/A of chlorantraniliprole and 0.2 lb ai/A of bifenthrin per year. This total includes applications of VKM32 and other chlorantraniliprole or bifenthrin containing products.

**Grasshopper** - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched and the majority of the grasshopper population is 2nd – 3rd instar nymphs. Once grasshoppers contact and/or ingest VKM32 insect control there will be rapid feeding cessation. Do not make more than two sequential applications of VKM32 insect control before rotating to another registered insecticide having a different mode-of-action. To control corn earworm and most other ear-attacking pests, apply VKM32 insect control when silking begins and repeat as necessary to maintain control. To control western bean cutworm, apply at egg hatch before they move into the ear.

Southwestern Corn Borer, European Corn Borer: Make application for corn borer control with initial application at or shortly before egg hatch.

For control of other insect pests: Apply when pests first appear and repeat as necessary.

For Control of Mites: Apply for Banks Grass Mite control when colonies first form prior to leaf damage or discoloration and before dispersal above the bottom third of the plant. For Twospotted Spider Mite and Carmine Mite control, apply when colonies first form prior to leaf damage or discoloration and before widespread mite dispersal throughout the canopy. Higher rates will be necessary for heavier initial populations and corn under heat or drought stress.

\*Coverage is essential for control of this pest. Under heavy outbreak conditions, tank mixing with another product that is labeled for this pest is recommended for control. Pyrethroid resistance is common for this pest. Consult your local or state agricultural authority to determine if resistant pest populations are in your area. If so, refer to the resistance management statement in the Direction for Use section of this label.

Crop	Application Method	Target Pest	VKM32 Lb ai per acre	VKM32 fluid ounces product per acre	Last Application (Days to Harvest)	REI (Hours)
Peanut	FOLIAR	Cutworm species Green cloverworm Grasshoppers Leafhoppers Southern corn rootworm Stink bugs Rednecked peanut worm Threecornered alfalfa hopper Velvetbean caterpillar	0.084 - 0.167	4.8 – 9.6	14	12
		Cabbage looper Corn earworm Beet armyworm Fall armyworm Granulate cutworm Lesser cornstalk borer Soybean looper Southern armyworm Tobacco budworm Yellowstriped armyworm	0.098 - 0.167	5.6 – 9.6		
		Aphids Spider mites* Thrips Whitefly	0.134 – 0.167	7.7 – 9.6		

**USE RESTRICTIONS**

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

Make no more than 3 applications per acre per calendar year. Minimum interval between treatments is 14 days.

Do not feed green immature plants and peanut hay to livestock.

Do not apply more than a total of 0.2 lb ai/A of chlorantraniliprole and 0.5 lb ai/A of bifenthrin per year. This total includes applications of VKM32 and other chlorantraniliprole or bifenthrin containing products.

**Grasshopper** - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched and the majority of the grasshopper population is 2nd – 3rd instar nymphs. Once grasshoppers contact and/or ingest VKM32 insect control there will be rapid feeding cessation. Do not make more than two sequential applications of VKM32 insect control before rotating to another registered insecticide having a different mode-of-action.

\*Coverage is essential for control of this pest. Under heavy outbreak conditions, tank mixing with another product that is labeled for this pest is recommended for control. Pyrethroid resistance is common for this pest. Consult your local or state agricultural authority to determine if resistant pest populations are in your area. If so, refer to the resistance management statement in the Direction for Use section of this label.

Crop	Application Method	Target Pest	VKM32 Lb ai per acre	VKM32 fluid ounces product per acre	Last Application (Days to Harvest)	REI (Hours)
SUCCULENT - Pea (Pisum spp.): Dwarf pea, Edible-pod pea, English pea, Garden pea, Snow pea, Sugar snap pea, Pigeon pea, Bean (phaseolus spp.), Broadbean succulent), Lima bean (green), Runner Bean, Snap bean, Wax bean (Vigna spp.), Asparagus bean, Blackeyed pea, Chinese longbean, Cowpea, Moth bean, Southern pea, Yardlong bean, Jackbean, Soybean (immature seed), Sword Bean	FOLIAR	Cutworms Cloverworm Grasshoppers Flea beetle Aster Leafhopper Leafhoppers	0.084 – 0.167	4.8 – 9.6	3	12
		Alfalfa caterpillar Corn earworm Beet armyworm European corn borer Fall armyworm Cabbage looper Soybean looper Southern armyworm Yellowstriped armyworm Webworms Western bean cutworm Aphids Bean leaf beetle Cucumber beetles Japanese beetle Adult sap beetle Stink bugs Corn rootworm adult Thrips Pea weevil Pea leaf weevil Plant bugs	0.098 - 0.167	5.6 – 9.6		
		Banks grass mite* Twospotted spider mite* Carminite mite* Lygus species	0.134 - 0.167	7.7 - 9.6		
		Leafminers Silverleaf whitefly	0.167	9.6		

**USE RESTRICTIONS**

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

For aerial application, use a minimum of 5 gallons per acre (gpa) of water.

Make no more than 2 applications per acre per calendar year.

Minimum interval between treatments is 3 days

Do not apply more than 19.2 fl oz VKM32 insect control or 0.2 lb ai. of chlorantraniliprole and 0.2 lb ai of bifenthrin containing products per acre per calendar year.

When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray.

**Grasshopper** - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched and the majority of the grasshopper population is 2nd – 3rd instar nymphs. Once grasshoppers contact and/or ingest VKM32 insect control there will be rapid feeding cessation. Do not make more than two sequential applications of VKM32 insect control before rotating to another registered insecticide having a different mode-of-action.

\*Coverage is essential for control of this pest. Under heavy outbreak conditions, tank mixing with another product that is labeled for this pest is recommended for control. Pyrethroid resistance is common for this pest. Consult your local or state agricultural authority to determine if resistant pest populations are in your area. If so, refer to the resistance management statement in the Direction for Use section of this label.

Crop	Application Method	Target Pest	VKM32 Lb ai per acre	VKM32 fluid ounces product per acre	Last Application (Days to Harvest)	REI (Hours)
DRIED cultivars of: Bean (Lupinus), Bean (Phaseolus), Field bean, Kidney bean. Lima bean (dry), Navy bean, Pinto bean, Tepary bean, Bean (Vigna), Adzuki bean, Blackeyed pea, Catjang, Cowpea, Crowder pea, Moth bean, Mung bean, Rice bean, Southern pea, Urd bean, Broad bean (dry), Chickpea, Guar, Lablab bean, Lentil, Pea (Pisum), Field pea, Pigeon pea	FOLIAR	Cutworms Cloverworm Grasshoppers Flea beetle Aster leafhopper Leafhoppers	0.084 – 0.167	4.8 – 9.6	14	12
		Alfalfa caterpillar Corn earworm Beet armyworm European corn borer Fall armyworm Cabbage looper Soybean looper Southern armyworm Yellowstriped armyworm Webworms Western bean cutworm Aphids Bean leaf beetle Cucumber beetles Japanese beetle Sap beetle adult Stink bugs Corn rootworm adult Thrips Pea weevil Pea leaf weevil Plant bugs	0.098 - 0.167	5.6 – 9.6		
		Banks grass mite*	0.134 - 0.167	7.7 - 9.6		
		Twospotted spider mite* Carmin mite* Lygus species				
		Leafminers Silverleaf whitefly	0.167	9.6		

**USE RESTRICTIONS**

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

For aerial application, use a minimum of 5 gallons per acre (gpa) of water.

Make no more than 2 applications per acre per calendar year for peas and no more than 3 applications per acre per calendar year for beans.

Minimum interval between treatments is 7 days

Do not apply more than 19.2 fl oz VKM32 insect control or 0.2 lb ai. of chlorantraniliprole and 0.2 lb ai of bifenthrin containing products per acre per calendar year.

When applying by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray.

**Grasshopper** - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched and the majority of the grasshopper population is 2nd – 3rd instar nymphs. Once grasshoppers contact and/or ingest VKM32 insect control there will be rapid feeding cessation. Do not make more than two sequential applications of VKM32 insect control before rotating to another registered insecticide having a different mode-of-action.

\*Coverage is essential for control of this pest. Under heavy outbreak conditions, tank mixing with another product that is labeled for this pest is recommended for control. Pyrethroid resistance is common for this pest. Consult your local or state agricultural authority to determine if resistant pest populations are in your area. If so, refer to the resistance management statement in the Direction for Use section of this label.

Crop	Application Method	Target Pest	VKM32 Lb ai per acre	VKM32 fluid ounces product per acre	Last Application (Days to Harvest)	REI (Hours)
<b>Root, Tuber, and Corm Vegetables</b> (except potato):  Burdock, edible; Carrot; Celeriac; Chervil, turnip rooted; Chicory; Ginseng; Garden beets; Horseradish; Parsley, turnip rooted; Parsnip; Radish; Radish, oriental; Rutabaga; Salsify; Salsify, black; Salsify, Spanish; Skirret, Turnip; Sweet potato,; Arracacha; Arrowroot; Chinese artichoke; Jerusalem artichoke; Edible canna; Cassava (bitter and sweet); Chayote (root); Chufa; Dasheen (taro); Ginger; Leren; Tanier; Turmeric; Yam bean; True yam	FOLIAR	Beet armyworm Western yellowstriped armyworm Corn earworm Cross-striped cabbageworm Cutworms Diamondback moth European corn borer Fall armyworm Green cloverworm Hornworms Imported cabbageworm Loopers Southern armyworm Tobacco budworm Velvetbean caterpillar Flea beetles Click beetles Cucumber beetles White fringed beetles May/June beetles Sugarcane beetles	0.098 - 0.167	5.6 – 9.6	21	12
		Aphids Celery leaf-tier Flea Beetles Spider mites*	0.134 - 0.167	7.7 – 9.6		
		Silverleaf whitefly	0.167	9.6		

**USE RESTRICTIONS**  
 Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.  
 For aerial application, use a minimum of 5 gallons per acre (gpa) of water.  
 Minimum interval between treatments is 7 days  
 Do not apply more than 28.8 fl oz VKM32 insect control or 0.2 lb ai. of chlorantraniliprole and 0.5 lb ai (0.4 lb ai/acre for garden beets) of bifenthrin containing products per acre per calendar year.  
 \* Coverage is essential for control of this pest. Under heavy outbreak conditions, tank mixing with another product that is labeled for this pest is recommended for control. Pyrethroid resistance is common for this pest. Consult your local or state agricultural authority to determine if resistant pest populations are in your area. If so, refer to the resistance management statement in the Direction for Use section of this label.

Crop	Application Method	Target Pest	VKM32 Lb ai per acre	VKM32 fluid ounces product per acre	Last Application (Days to Harvest)	REI (Hours)
Potato	FOLIAR	Grasshoppers	0.068 - 0.167	3.9 – 9.6	21 days	12
		Beet and yellowstriped armyworms Cabbage looper Colorado potato beetle European corn borer Potato tuberworm Flea beetles Click beetles Cucumber beetles White fringed beetles May/June beetles	0.098 - 0.167	5.6 – 9.6		

**USE RESTRICTIONS**

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

For aerial application, use a minimum of 5 gallons per acre (gpa) of water.

Make no more than 2 applications per acre per calendar year. Minimum interval between treatments is 21 days

Do not apply more than 28.8 fl oz VKM32 insect control or 0.2 lb ai. of chlorantraniliprole and 0.5 lb ai of bifenthrin containing products per acre per calendar year.

**Colorado potato beetle resistance management:** Do not apply VKM32 insect control more than twice to a generation of Colorado potato beetle or within any 30 day period. Application(s) to the next generation of Colorado potato beetle must be with an effective product with a different mode of action.

**Potato tuberworm:** Begin application when field scouting indicates the presence of tuberworm adults and/or larvae. Potato tuberworm often have overlapping generations so repeat applications of VKM32 insect control may be needed based on field scouting. Avoid treating successive generations with the same mode of action. It is important to protect the crop just prior to harvest when foliage starts to senesce. Use the high rate of VKM32 insect control where potato tuberworm pressure is high. Failure to adequately control potato tuberworm larvae prior to crop senescence or vine kill increases the risk of tuber damage. Foliar sprays alone, by air or ground, may not provide adequate control of larvae in the mid to lower crop canopy. Performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v).

**Cabbage looper:** West of the Rocky Mountains - (NM, CO, WY, MT, UT, NV, AZ, ID, WA, OR, CA, AK and HI) apply VKM32 insect control to control early stage instars (1st - 3rd instar).

**Colorado potato beetle:** Apply just prior to or just after egg hatch while larvae are small. In some areas, where local populations of Colorado Potato Beetle have elevated levels of resistance to insecticides, use VKM32 insect control at the 9.6 fluid ounce per acre application rate. With resistant populations of Colorado Potato Beetle, back-to- back applications on 5 to 7 day intervals may be required to achieve maximum control.

**Grasshopper** - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched and the majority of the grasshopper population is 2nd – 3rd instar nymphs. Once grasshoppers contact and/or ingest VKM32 insect control there will be rapid feeding cessation. Do not make more than two sequential applications of VKM32 insect control before rotating to another registered insecticide having a different mode-of-action.

Crop	Application Method	Target Pest	VKM32 Lb ai per acre	VKM32 fluid ounces product per acre	Last Application (Days to Harvest)	REI (Hours)
Soybean	FOLIAR	Aphids*	0.084 - 0.167	4.8 – 9.6	18	12
		Bean leaf beetle				
		Blister beetle spp.				
		Cabbage looper				
		Corn earworm				
		Corn rootworm adult				
		Cowpea curculio				
		Cucumber beetle adult				
		Cutworms				
		False chinch bug				
		Flea beetle				
		Grasshoppers				
		Green cloverworm				
		Green stinkbug				
		Southern green stinkbug				
		Japanese beetle adult				
		Leaf skeletonizer species				
		Leafhoppers				
		Mexican bean beetle				
		Painted lady (thistle) caterpillar				
		Pea leaf weevil				
		Saltmarsh caterpillar				
		Seedcorn maggot adult				
		Spittlebug				
		Stink Bug				
		Three-Cornered alfalfa Hopper				
		Thrips				
		Velvetbean caterpillar				
		Woollybear caterpillar				
		Alfalfa caterpillar	0.098 - 0.167	5.6 – 9.6		
		Armyworms				
		Beet armyworm				
		Fall armyworm				
		Dectes stem borer				
		European corn borer				
		Lesser cornstalk borer				
		Silverspotted skipper				
		Southern armyworm				
		Soybean looper				
		Tobacco budworm				
		Webworm				
		Lygus species	0.134 - 0.167	7.7 – 9.6		
		Brown marmorated stink bug				
		Redbanded stink bug				
		Whitefly				
		Two spotted spider mites*				

**USE RESTRICTIONS**

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures. Make no more than 3 applications per acre per calendar year. Minimum interval between treatments is 30 days. Do not apply more than a total of 0.2 lb ai/A of chlorantraniliprole and 0.3 lb ai/A of bifenthrin per year. This total includes applications of VKM32 and other chlorantraniliprole or bifenthrin containing products.

**Grasshopper** - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched and the majority of the grasshopper population is 2nd – 3rd instar nymphs. Once grasshoppers contact and/or ingest VKM32 insect control there will be rapid feeding cessation. Do not make more than two sequential applications of VKM32 insect control before rotating to another registered insecticide having a different mode-of-action.

**Dectes stem borer** - To minimize crop damage by the pest, apply at the onset of adult beetle flight. Ensure thorough spray coverage and make application to soybeans prior to egg laying. For best results, regular scouting using a sweep net is necessary to identify the emergence and infestation of adult beetles. If regular scouting is not used, apply at 1500 Growing Degree Days (GDD) in Nebraska and northern Kansas or consult with your local agricultural advisor for advice on application timing. Continued scouting should be used to track the duration of the emergence period. A second application may be necessary at 3 to 4 weeks after the initial application if adults continue to emerge over an extended period.

\*Coverage is essential for control of this pest. Under heavy outbreak conditions, tank mixing with another product that is labeled for this pest is recommended for control. Pyrethroid resistance is common for this pest. Consult your local or state agricultural authority to determine if resistant pest populations are in your area. If so, refer to the resistance management statement in the Direction for Use section of this label.

Crop	Application Method	Target Pest	VKM32 Lb ai per acre	VKM32 fluid ounces product per acre	Last Application (Days to Harvest)	REI (Hours)
Tobacco	FOLIAR	Aphid spp. Cutworm species Flea beetle (adults) Chinch bugs Stink bugs Japanese beetles Grasshoppers Green bugs Thrips Cucumber beetle	0.084 - 0.167	4.8 – 9.6	14	12
		Armyworm species Saltmarsh caterpillar Split worm (potato tuberworm) Tobacco budworm Tomato hornworm Tobacco hornworm	0.098 - 0.167	5.6 – 9.6		
		Spider mites* Lygus species Whiteflies	0.167	9.6		

**USE RESTRICTIONS**  
Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.  
Do not apply later than layby.  
Make no more than 2 applications per acre per calendar year.  
Minimum interval between treatments is 14 days  
Do not apply more than 19.2 fl oz VKM32 insect control or 0.2 lb ai. of chlorantraniliprole and 0.2 lb ai of bifenthrin containing products per acre per calendar year.  
**Grasshopper** - With foliar sprays, performance is improved with the addition of a Methylated Seed Oil (MSO) adjuvant at 1 gallon per 100 gallons of spray volume (1% v/v). Apply when grasshopper populations reach local established thresholds to prevent crop damage. Correct timing of spray applications to nymphal stages and thorough coverage is critical to achieve optimum control. Applications should be made when eggs have hatched and the majority of the grasshopper population is 2nd – 3rd instar nymphs. Once grasshoppers contact and/or ingest VKM32 insect control there will be rapid feeding cessation. Do not make more than two sequential applications of VKM32 insect control before rotating to another registered insecticide having a different mode-of-action.  
\*Coverage is essential for control of this pest. Under heavy outbreak conditions, tank mixing with another product that is labeled for this pest is recommended for control. Pyrethroid resistance is common for this pest. Consult your local or state agricultural authority to determine if resistant pest populations are in your area. If so, refer to the resistance management statement in the Direction for Use section of this label.

Crop	Application Method	Target Pest	VKM32 Lb ai per acre	VKM32 fluid ounces product per acre	Last Application (Days to Harvest)	REI (Hours)
Pecans	FOLIAR	Black pecan aphid Leaffooted bugs Pecan phylloxera Plant bugs Stink bugs Yellow pecan aphid	0.084 – 0.167	4.8 – 9.6	21	12
		Hickory shuckworm Pecan nut casebearer Pecan leaf casebearer	0.098 – 0.167	5.6 – 9.6		
		Pecan weevil Spider mite species*	0.134 - 0.167	7.7 – 9.6		

**USE RESTRICTIONS**

Apply higher rates within the listed range for heavier infestations, larger/denser crops or extreme environmental conditions such as rainy weather and high temperatures.

Make no more than 3 applications per acre per calendar year.

Minimum interval between treatments is 15 days

Do not exceed 0.2 lb ai of bifenthrin per acre per application. Do not apply more than 28.8 fl oz VKM32 insect control or 0.2 lb ai. of chlorantraniliprole and 0.5 lb ai of bifenthrin containing products per acre per calendar year.

Do not graze livestock in treated orchards or cut treated cover crops for feed.

Spray Volume: Thorough coverage is essential to achieve best results. Select a spray volume appropriate for the size of trees or plants and density of foliage.

Do not apply less than 30 gal water per acre. For best results apply 100 -150 gal water per acre. Where higher spray volumes are used, apply a higher VKM32 insect control rate in the specified rate range.

\*Coverage is essential for control of this pest. Under heavy outbreak conditions, tank mixing with another product that is labeled for this pest is recommended for control. Pyrethroid resistance is common for this pest. Consult your local or state agricultural authority to determine if resistant pest populations are in your area. If so, refer to the resistance management statement in the Direction for Use section of this label.

## ***STORAGE AND DISPOSAL***

Do not contaminate water, food, or feed by storage or disposal.

**PESTICIDE STORAGE:** Do not subject to temperatures below 32 degrees F. Store product in original container only in a location inaccessible to children and pets. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Not for use or storage in or around the home.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

**CONTAINER HANDLING:** Refer to the Net Contents section of this product's labeling for the applicable "Refillable Container" or "Nonrefillable Container" designation.

**For Small (Capacity Equal to or Less Than 5 Gallons) Nonrefillable Plastic Containers:** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.

**For Large (Capacity Greater Than 5 Gallons) Nonrefillable Plastic Containers:** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.

**Nonrefillable Rigid Plastic and Metal Containers, e.g., Intermediate Bulk Containers [IBC] (Size or Shape Too Large to be Tipped, Rolled or Turned Upside Down):** Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying the contents from this container into application equipment or mix tank and before final disposal using the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

**For All Refillable Containers:** Refillable container. Refill this container with chlorantraniliprole plus bifenthrin only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn out threads and closure devices. Check for leaks after refilling and before transporting. Do not transport if container is damaged or leaking. If the container is damaged, leaking or obsolete, or in the event of a major spill, fire or other emergency, contact CHEMTREC (Transportation and Spills) at 1-800-424-9300, day or night.

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Notice: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions beyond the control of FMC or Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User, and, to the extent consistent with applicable law, Buyer and User agree to hold FMC and Seller harmless for any claims relating to such factors.

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